UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,598	07/23/2002	Janet Mary Hock	X-13527	9430

25885 7590 01/05/2004

ELI LILLY AND COMPANY
PATENT DIVISION
P.O. BOX 6288
INDIANAPOLIS, IN 46206-6288

EXAMINER	
AUDET, MAURY A	

ART UNIT	PAPER NUMBER
1654	

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,598	HOCK, JANET MARY	
	Examiner	Art Unit	
	Maury Audet	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *1-13 and 19-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121.

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept.

In accordance with 37 CFR 1.142, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

I. Claims 1-9 and 14-18, drawn to a method reducing risk of cancer using PTH, classified in class 514, subclass 2.

II. Claim 10-13 and 19, drawn to a method treating osteoporosis in a woman identified as having a high risk of or as suffering therefrom using PTH, classified in class 424, subclass 1.69.

III. Claim 20-23, drawn to a method making a medicament with PTH, a polyol, a buffering agent, and water, classified in class 530, subclass 300.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are directed to methods of reducing risk of cancer (Invention I) and treating osteoporosis (Invention II).

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are directed to methods of reducing risk of cancer using PTH (Invention I) and a method of making a medicament including PTH, but also polyol, a buffering agent, and water (Invention II).

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are directed to methods of treating osteoporosis (Invention II) and a method of making a medicament including PTH, but also polyol, a buffering agent, and water (Invention III).

The several inventions above are independent and distinct, each from the other. They have acquired a separate status in the art as a separate subject for inventive effect and require independent searches. The search for each of the above inventions is not co-extensive particularly with regard to the literature search. Further, a reference, which would anticipate the invention of one group, would not necessarily anticipate or even make obvious another group. Finally, the consideration for patentability is different in each case. Thus, it would be an undue burden to examine all of the above inventions in one application. Restriction for examination purposes is therefore proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CRF 1.143).

Applicant is reminded that upon cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

During a telephone conversation with Tom Webster, Attorney for Applicant, on December 5, 2003, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9 and 14-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-13 and 19-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

Claim 9 is objected to because of the following informalities: in line 2, the term "on" must be added after the term "based". Appropriate correction is required.

Claim Rejections - 35 USC § 112 2nd

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 and 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2 (and claims 1 and 3), for example, it is unclear what is contemplated by "the cancer comprises a carcinoma"? The invention is drawn to "reducing the risk of cancer" using PTH. Cancer is the "general term for more than 100 diseases that are characterized by **uncontrolled**, abnormal growth of cells (On-line medical dictionary. http://cancerweb.ncl.ac.uk/cgi-bin/omd?query=cancer. 11/18/97). A carcinoma (breast, skin, bladder, gastric) is "a malignant **new growth** that arises from epithelium, found in skin or, more commonly, the lining of body organs" (On-line medical dictionary. http://cancerweb.ncl.ac.uk/cgi-bin/omd?query=carcinoma. 12/16/97)(emphasis added)). Thus, the claim 2 language is confusing because cancer does not comprise a carcinoma, since cancer is not a "new growth" and since the carcinoma would have already risen to the level of "uncontrolled growth" and now constitutes "cancer". Primarily, claim 2 is confusing, because it appears Applicant is trying to identify what "cancer[s]" are being targeted for reducing the risk thereof, by identifying what "carcinoma's" are to be treated by PTH, **in order to** reduce the risk of such carcinoma's developing into such cancers. In order to distinctly claim the invention, it is suggested that claim 1 be amended to recite "A method for reducing the risk of cancer in a human subject at risk for developing cancer or in a human subject clinically diagnosed with a

carcinoma, comprising administering to the subject an effective amount of a parathyroid hormone." It is suggested that claim 2 be amended to cancel "comprises a carcinoma" and instead recite "wherein the cancer is selected from the group consisting of breast, skin, bladder, gastric, or a combination thereof." It is suggested that claim 3 cancel the term "cancer" and add therein the term "carcinoma". These are merely a suggestion, assuming adequate support may be found for treating a subject suffering from said carcinoma(s) and notwithstanding any other rejections as to the claims.

In claim 17, it is unclear what is meant in line three, wherein the phrases "in a daily dose of in a daily dose of" are recited. It is suggested that one of "in a daily does of" be cancelled.

In claim 18, it is unclear what is meant by "further administering calcium, vitamin D, or a combination thereof" with PTH? Specification page 18, lines 13-15 describes that PTH "may be administered with or without concurrent administration of an antiresorptive agent **other than vitamin D or calcium**". Thus, the specification describe that vitamin D or calcium should never be administered with PTH of the invention. No other specific antiresorptive agents are described as capable of use in the present invention. Furthermore, the specification teaches that PTH may be administered with or without such an agent, thus, the therapeutic value of these antiresorptive agents in the reducing the risk of cancer and to the invention, is strongly in question. Due to the confusion between the specification and claim 18, it is suggested the claim be cancelled. [Note: The use of Vitamin D and calcium appears to really be directed to the Invention II, a method of treating osteoporosis using PTH].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-9 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 92/00753 (THE REGENTS OF THE UNIVERSITY OF CALIFORNIA).

WO 92/00753 teaches the use of PTH for the treating cancer in humans [i.e. reducing risk of cancer] (abstract, claims 1, 27-29).

Claims 1-9 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Aiginger et al. (Oesterreichische Zeitschrift Fuer Onkologie. Vol. 2, no. 1, 1975: 17-24).

Aiginger teach the use of PTH to treat carcinoma, such as breast, prostate, and bone [i.e. reducing risk of cancer] (abstract).

Claims 1-9 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Trembling et al. (Journal of Endocrinology. Vol. 144, no. Suppl., 1995: P223).

Trembling et al. teach the use of PTHrP (PTH related protein) 1-34 to inhibit the proliferation of breast cancer cell lines [i.e. reducing risk of cancer] (abstract).

Claims 1-9 and 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Holick (US 5840690).

Holick teaches the use of human PTH or fragments thereof (e.g. PTH(1-34)) in the treatment of cancer, by the inhibition of cancer cell proliferation and by the induction of differentiation [i.e. reducing risk of cancer] (see column 4, lines 9-14; column 10, lines 27-32; and column 12, lines 12-20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 92/00753 (THE REGENTS OF THE UNIVERSITY OF CALIFORNIA), Aiginger et al. (Oesterreichische Zeitschrift Fuer Onkologie. Vol. 2, no. 1, 1975: 17-24), Trembling et al.

(Journal of Endocrinology. Vol. 144, no. Suppl., 1995: P223), Holick (US 5840690) in view of Bishop et al. (US 5972917).

WO 92/00753, Aiginger et al., Trembling et al., and Holick are all discussed above. The references do not expressly teach the additional use of Vitamin D or calcium with PTH in reducing risk of cancer. [Note 35 U.S.C. § 112 2nd above, regarding the questionable use of Vitamin D or calcium in the method of reducing risk of cancer. However, the claim limitation is nevertheless addressed here].

Bishop et al. teach the use of Vitamin D and a calcium receptor agonist [i.e. calcium] in a method of achieving an effect in a patient to alleviate the pathological effects of cancer such as skin, breast colon, and prostate (claims 1, 10, and 15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Vitamin D and calcium (if intended in a method of reducing the risk of cancer) in the methods of any of WO 92/00753, Aiginger et al., Trembling et al., and Holick, because Bishop et al. teach the advantageous use of Vitamin D and calcium in a method directed to reducing the effects of cancer.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to Vitamin D and calcium (if intended in a method of reducing the risk of cancer) in the methods of any of WO 92/00753, Aiginger et al., Trembling et al., and Holick, because the use of any other general therapeutic compounds directed to improving the health of a compromised patient (i.e. one at risk of cancer or with a carcinoma) would be of routine optimization of one of skill in the art.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maury Audet whose telephone number is 703-305-5039. The examiner can normally be reached from 7:00 AM – 5:30 PM, off Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached at 703-306-3220. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-1234 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

MA
December 19, 2003

CHRISTOPHER R. TATE
PRIMARY EXAMINER